



Aviation Investigation Final Report

Location:	Ruidoso, New Mexico	Accident Number:	GAA18CA571
Date & Time:	September 29, 2018, 15:10 Local	Registration:	N894NA
Aircraft:	Eurocopter AS350	Aircraft Damage:	Substantial
Defining Event:	Hard landing	Injuries:	3 None
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Air Medical (Unspecified)		

Analysis

The helicopter pilot was conducting an emergency medical services flight. He reported that, while en route to a ski resort to pick up a patient, he decided to conduct an eastbound reconnaissance over the landing site to scan for obstacles. He saw two cables in front and below the helicopter's flightpath and initiated a go-around. He added power to clear the cables, and once the tail cleared the cables, he lowered the collective due to a slight drop in the main rotor speed. As he continued the go-around, he initiated a 180° left turn to attempt an approach to the landing site. During the westward approach and while the helicopter was about 20 ft above ground level, he raised the collective to reduce the descent rate, and the main rotor speed subsequently decayed. He felt that, due to the "faster than normal" descent rate, he would not be able to cushion the landing. Before touchdown, a medical crewmember spotted an elevated steel barrier cable below the helicopter, and the pilot made a 90° left turn to avoid a tail rotor strike. The helicopter subsequently touched down hard, bounced, rotated about 180° counterclockwise over the barrier cable, slid down an embankment, and came to rest upright.

The helicopter sustained substantial damage to the fuselage and vertical stabilizer.

The director of operations reported that there were no preaccident mechanical failures or malfunctions with the helicopter that would have precluded normal operation.

The pilot reported that, during his preflight preparation, he did not calculate the hover-in-ground-effect value, the hover out-of-ground-effect value, or the density altitude for the designated landing site. He added that the accident flight was his second flight in a high-altitude, mountainous environment and that most of his flight hours were accumulated at sea level. He was not aware that the ski resort provided an approach, landing, and takeoff procedure. He added that he should have completed the go-around and circled back around to land.

A Federal Aviation Administration inspector reported that, at the time of the accident, the density altitude for the landing site at 9,793 ft was over 12,000 ft.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to maintain the proper descent rate during landing. Contributing to the accident were the pilot's failure to conduct preflight performance calculations, which resulted in his operating the helicopter in high-density altitude conditions, and his lack of experience in high-altitude, mountainous flying.

Findings

Aircraft	Descent rate - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Personnel issues	Performance calculations - Pilot
Personnel issues	Total experience - Pilot
Environmental issues	High density altitude - Effect on operation
Organizational issues	CRM/MRM training - Operator

Factual Information

History of Flight

Landing-flare/touchdown	Miscellaneous/other
Landing-flare/touchdown	Hard landing (Defining event)
Landing-flare/touchdown	Abnormal runway contact
Landing-flare/touchdown	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	53, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	Helicopter	Restraint Used:	4-point
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	Helicopter	Toxicology Performed:	No
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	April 4, 2018
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 12, 2018
Flight Time:	(Estimated) 16818 hours (Total, all aircraft), 3526 hours (Total, this make and model), 16818 hours (Pilot In Command, all aircraft), 56 hours (Last 90 days, all aircraft), 26 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Eurocopter	Registration:	N894NA
Model/Series:	AS350 B2	Aircraft Category:	Helicopter
Year of Manufacture:	1996	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	2904
Landing Gear Type:	Skid	Seats:	5
Date/Type of Last Inspection:	April 9, 2018 100 hour	Certified Max Gross Wt.:	4961 lbs
Time Since Last Inspection:		Engines:	1 Turbo shaft
Airframe Total Time:	8199.4 Hrs at time of accident	Engine Manufacturer:	Turbomeca
ELT:		Engine Model/Series:	Arriel 1D1
Registered Owner:	Roberts Aircraft Co	Rated Power:	
Operator:	Trans Aero Limited	Operating Certificate(s) Held:	Commuter air carrier (135)
Operator Does Business As:	Trans Aero MedEvac	Operator Designator Code:	O4VA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KSRR,6810 ft msl	Distance from Accident Site:	14 Nautical Miles
Observation Time:	21:15 Local	Direction from Accident Site:	77°
Lowest Cloud Condition:		Visibility	
Lowest Ceiling:		Visibility (RVR):	
Wind Speed/Gusts:	9 knots / 17 knots	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	220°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	30.27 inches Hg	Temperature/Dew Point:	25°C / 5°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Artesia, NM (ATS)	Type of Flight Plan Filed:	Unknown
Destination:	El Paso, TX	Type of Clearance:	Unknown
Departure Time:		Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	3 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 None	Latitude, Longitude:	33.396667,-105.785835(est)

Administrative Information

Investigator In Charge (IIC):	Nepomuceno, Eleazar
Additional Participating Persons:	Dennis Beattie; FAA; Albuquerque, NM
Original Publish Date:	March 20, 2020
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98387

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